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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,636	06/07/2000	Tue Nguyen	SIM013	8595
7590 03/24/2004			EXAMINER	
Tue Nguyen 496 Olive Ave Fremont, CA 94539			KERNS, KEVIN P	
			ART UNIT	PAPER NUMBER
			1725	
DATE MAILED: 03/24/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/589,636

Applicant(s)

NGUYEN, TUE

Examiner

Kevin P. Kerns

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 3,13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/7/00.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first, second, and third processing chambers, including corresponding chamber input ports, gas output ports, waste collection surfaces, a first chamber heater, second and third chamber coolers, and the fifth and sixth valves (only four valves are shown in the drawings), must be shown or the feature(s) canceled from the claim(s). In other words, Figures 2 and 3 show only one process chamber with a single connection to a vacuum pump, such that none of the above claimed structures clearly exists in the drawings. No new matter should be entered. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the disclosure lacks detailed descriptions of the structural relationships between the three "processing chambers" of claims 1-3, the plurality of collection surfaces of claim 6, and the valves (in particular the third, fourth, fifth, and sixth valves) of claims 7-9.

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3. The disclosure is objected to because of the following informalities: on page 2, 9th line, "reacts" should be changed to "react" after "further". On page 3, 17th line, "temperature" should be changed to "temperatures" after "process". On page 6, 16th line, "Detail" should be changed to "Detailed". On page 6, 2nd line from the end, "easily" should be changed to "easy". Corrections and/or clarifications are required for these and other errors that occur throughout the specification.

Claim Objections

4. Claims 3, 13, and 14 are objected to because of the following informalities: in claim 3, 2nd line, "e)" should be changed to "d)". In the 1st line of claims 13 and 14, "low" should be changed to "high" before "pressure". In claim 13, 2nd line, "further" should be changed to "further". Appropriate correction is required.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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6. Claims 1, 4, 5, and 10-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 11-17 of copending Application No. 09/589,633. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims include a high pressure chemical vapor trapping system that has first and second processing chambers, including the structural details of the first and second processing chambers set forth in items a) and b) of the independent claims and the remainder of the abovementioned dependent claims. Although claims 1, 4, 5, and 10-14 of the present application do not include the plurality of hollow transparent connectors, as set forth in claim 11 of Application No. 09/589,633, it would have been obvious to one of ordinary skill in the art to exclude this additional structural limitation, as open-ended "comprising" language exists in the present application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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With regard to claims 1-3 and 6-9, the following structural relationships are unclear when taken in view of the drawings and specification: details of the three "processing chambers" of claims 1-3, the plurality of collection surfaces of claim 6, and the valves (in particular the third, fourth, fifth, and sixth valves) of claims 7-9. It is unclear what would define a "processing chamber" and a "collection surface" in the claims, and it is believed that details of the hot and cold traps (from the disclosure) should be included in the claims for clarity.

Claim 7 recites the limitation "the metal collection surfaces". There is insufficient antecedent basis for this limitation in the claim. It is unclear what, if any, metal is being collected on the "collection surfaces" when taken in view of claims 1 and 7, as only "waste" materials are to be collected on the "collection surfaces".

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Varrin, Jr. et al. (US 5,015,503).

Varrin, Jr. et al. disclose an apparatus for producing compound semiconductor thin films as a result of chemical vapor deposition (CVD) processes, in which the apparatus includes three processing chambers (12,14,18) with corresponding input ports, output ports, waste collection surfaces, heaters/coolers to control trapping within respective process chambers (with selective temperature control of 450-500 degrees Celsius and below 300 degrees Celsius, respectively), an exhaust pump, a cross-connect line 24, and a bypass line 26, such that each of the chambers are connected by a series of conduits and valves between the chambers and to the exhaust region (abstract; column 2, lines 12-56; column 3, lines 18-68; column 4, lines 13-68; column 5, lines 1-68; column 6, lines 1-64; column 7, lines 1-54; and Figures 1-8). One of ordinary skill in the art would have recognized that the use of the plurality of valves, any of which would be selectively open or closed, would directly determine which of the conduits would serve as input and/or outlet ports for each respective processing chamber, as two conduits are connected to each of the processing chambers, and the positions of the valves are advantageous for the purpose of providing flexibility toward selective heating/cooling of the chambers for selective cleaning, disassembling, and/or replacement of individual chambers, in addition to providing a desired recirculation flow path (Varrin, Jr. et al.; abstract; column 2, lines 30-56; column 3, lines 18-61; and

Figures 1, 2, and 4-8). With regard to the control of temperatures to be colder/hotter in any of the three processing chambers with respect to one or more of the other chambers, which would determine whether gaseous or non-gaseous waste materials would be trapped, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

12. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Varrin, Jr. et al. (US 5,015,503) in view of Kumada et al. (US 5,405,445).

Varrin, Jr. et al. disclose and/or suggest the elements of claim 1 above. Varrin, Jr. et al. do not specifically disclose the use of a bias voltage and a catalyst.

However, Kumada et al. disclose a vacuum extraction system for a chemical vapor deposition (CVD) reactor vessel with a trapping device, in which the CVD apparatus 12 includes a reactor vessel 14 having first and second electrodes (16,18) through which an RF bias voltage is applied to cause a discharge therebetween (at a desired value and/or polarity depending on the amount of deposition and material of the substrate), while the system includes a trapping device 28 having a perforated tube member 78 that supplies a gaseous oxidizing agent (catalyst) of oxygen, water etc., such that active species formed by the discharge are deposited as a thin film in controlled amounts on the substrate, and to form oxides of deposition components, including oxides of silicon and titanium (abstract; column 1, lines 9-16 and 67-68;

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column 2, lines 1-68; column 3, lines 16-68; column 4, lines 1-68; column 5, lines 1-39; and Figures 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the apparatus for producing compound semiconductor thin films, as disclosed/suggested by Varrin, Jr. et al., by using the RF bias voltage and oxidizing agent catalyst, as taught by Kumada et al., in order to form active species via the RF discharge voltage for depositing as a thin film in controlled amounts on the substrate, and to form oxides of deposition components, including oxides of silicon and titanium, respectively (Kumada et al.; abstract; column 3, lines 25-49; column 4, lines 60-68; and column 5, lines 1-39).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Sikander et al., Nishihata et al., Ishikawa et al., Schmitt et al., and Lin et al. references are also cited.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 3/20/04*
Examiner
Art Unit 1725

KPK
kpk

March 20, 2004